

Claims

1-26 Canceled

27. (New) A method for determining at least one activation magnitude for a safety device in a vehicle, which can be operated in at least two operational states, where the operational state of the safety device can be changed as a function of a result of a comparison of the activation magnitude with a predetermined threshold value, where, by means of an environment sensor, object data of at least one object in the surroundings of the vehicle are acquired, and where the object data comprise a position of the object, a speed of the object, and a direction of movement of the object, the method comprising:

determining a first trajectory from the object data,

determining, from the first trajectory, a first length of time up to a latest time at which a driving maneuver for preventing a collision with the object must be started; and

determining an activation magnitude as a function of the first length of time.

28. (New) A method according to claim 27, wherein a second length of time is determined, up to a latest time at which a braking of the vehicle must be started, to prevent a collision with the object, as well as a third length of time, up to a latest time at which a steering movement must be started for preventing the collision with the object, and the first length of time is determined as the maximum of the second length of time and of the third length of time.

29. (New) A method according to claim 28, wherein a second trajectory of an additional object is determined, in that an intersection of the second trajectory and of a front vehicle delimitation line is determined, as well as a fourth length of time up to a time at which the object reaches the front vehicle delimitation line, and in that the third

length of time is not taken into account in the maximum value formation for the determination of the first length of time, if the separation between the intersection of the second trajectory and the front vehicle delimitation line and a vehicle longitudinal axis is less than a predetermined safety separation, and if the fourth length of time is less than a predetermined threshold value.

30. (New) A method according to claim 29, wherein the length of time is not taken into account in the maximum value formation for the determination of the third length of time if the interaction of the second trajectory and of the front vehicle delimitation line is within a collision avoidance zone, and the fourth length of time is less than the predetermined threshold, where the collision avoidance zone is defined by a separation between a point of the front vehicle delimitation line, located in the first direction transverse to the vehicle, and the vehicle longitudinal axis.
31. New) A method according to claim 29, wherein the length of time is not taken into account in the maximum value formation for the determination of the third length of time if the intersection of the second trajectory and the front vehicle delimitation line is within a collision avoidance zone, and the fourth length of time is less than the predetermined threshold value, where the collision avoidance zone is defined by a separation between a point of the front vehicle delimitation line, located in the second direction transverse to the vehicle, and the vehicle longitudinal axis.
32. (New) A method according to claim 27, wherein a third length of time is determined as the maximum of a length of time up to a latest time, at which an avoidance steering movement in a first direction transverse to the vehicle must be started to prevent a collision with the object, and a length of time is determined up to a latest time, at which an avoidance steering movement in a second direction transverse to the vehicle must be started to prevent a collision with the object.

33. (New) A method according to claim 27, wherein a separation between an intersection of the first trajectory with the front vehicle delimitation line and the vehicle longitudinal axis is assigned a collision course safety, where the collision course safety corresponds to a probability of the first object and the vehicle being on a collision course.
34. (New) A method according to claim 27, wherein from a relation between the first length of time up to a latest time at which a driving maneuver must be started for preventing a collision with the object, and a predetermined additional length of time, an accident non-avoidance probability is determined.
35. (New) A method according to claim 34, wherein as a function of the accident non-avoidance probability and the collision course safety, a danger potential for an object is determined.
36. (New) A method according to claim 35, wherein the danger potential is used as an activation magnitude.
37. (New) A method according to claim 27, wherein a collision time is calculated, at which the trajectory of the object intersects the front vehicle delimitation line.
38. (New) A method according to claim 37, wherein the collision time is used as an additional activation magnitude, wherein the operational state of the safety device is changed as a function of a result of a comparison of the collision time with a predetermined threshold.
39. (New) A method according to claim 27, wherein trajectories are determined for several objects acquired by the environment sensor, the trajectories are used for

determining the first length of time for each one of the objects with a non-vanishingly small collision course safety, a minimum value of the determined first length of times is generated, and the activation magnitude is determined from the minimum value generated.

40. (New) A method according to claim 27, wherein trajectories are determined for several of objects acquired by the environment sensor, the trajectories are used for determining the first length of time for each one of the objects with a non-vanishingly small collision course safety, a minimum value of the determined collision times is determined, and the activation magnitude is determined from the object data of the object chosen on the basis of the minimum value.
41. (New) A method according to claim 27, wherein a danger potential is determined for each one of several objects acquired by the environment sensor, a maximum value of the determined danger potentials is determined, and the maximum value is used as an activation magnitude.
42. (New) A method according to claim 27, wherein a collision time is determined for several of the objects acquired by the environment sensor, and the earliest determined collision time is used as an additional activation magnitude.
43. (New) A method for controlling a safety device in a vehicle, which can be operated in at least two operational states, wherein via an environment sensor, object data of at least one object in surroundings of the vehicle are determined, the object data comprise a position of the object, a speed of the object, and a direction of movement of the object, the method comprising:
 - determining from the object data, a trajectory of the object;
 - determining, from the trajectory of the object, a first magnitude;

comparing the first magnitude with a predetermined threshold value; changing an operational state of the safety device as a function of the comparison between the first magnitude and the predetermined threshold value; and determining, using the trajectory, a second magnitude, wherein the threshold value is determined as a function of the second magnitude.

44. (New) A method according to claim 43, wherein the second magnitude is an accident severity, where the accident severity is assigned to the relative impact speed of the object and the vehicle.
45. (New) A method according to claim 43, wherein the second magnitude is a collision angle between the vehicle and the object.
46. (New) A method according to claim 43, wherein the first magnitude is a collision time, at which the trajectory of the object intersects a front vehicle delimitation line.
47. (New) A method according to claim 43, wherein the first magnitude is an activation magnitude.
48. (New) A method according to claim 43, wherein the safety device is a reversible safety device.
49. (New) A method according to claim 43, wherein the safety device is a reversible motor-driven belt tightener.
50. (New) An arrangement for determining at least one activation magnitude for a

safety device in a vehicle, which can be operated in at least two operational states, the arrangement comprising:

an environment sensor, which acquires object data of at least one object in the surroundings of the vehicle, wherein the object data comprise a position of the object, a speed of the object, and a direction of movement of the object; and

a risk calculator for determining a first trajectory of the object from the object data, wherein the trajectory is used for determining a first length of time up to a latest time at which a driving maneuver for preventing a collision with the object must be started, and the risk calculator determines an activation magnitude of the first length of time.

51. (New) A arrangement according to claim 50, wherein the risk calculator includes a comparison device for carrying out a comparison between the activation magnitude and a threshold value, and the risk calculator converts a result of the comparison into a control signal for changing the operational state of the safety device.

52. (New) An arrangement for controlling a safety device in a vehicle, which device can be operated in at least two operational states, the arrangement comprising:

an environment sensor, for acquiring an object data of at least one object in the surroundings of the vehicle, wherein the object data comprise a position of the object, a speed of the object, and a direction of movement of the object; and

a risk calculator, connected with a safety device, for determining a trajectory of the object from the object data, wherein the trajectory is used for determining a first magnitude and a second magnitude, and the risk calculator determines a threshold value from the second magnitude, the risk calculator having a comparison device for comparing the first magnitude with a threshold value, and the risk calculator converts a result of the comparison into a control signal for changing the operational state of the safety device.